

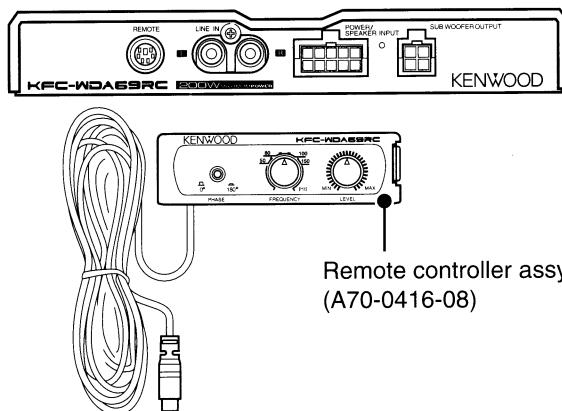
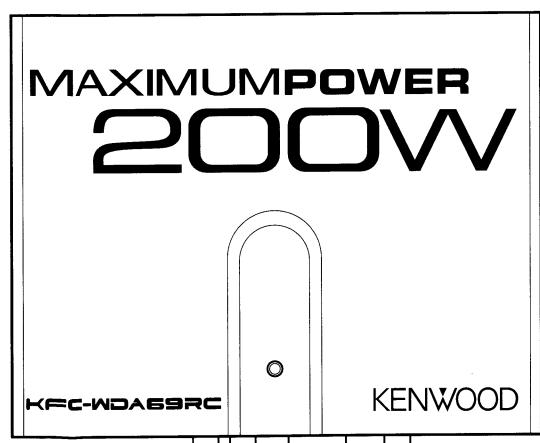
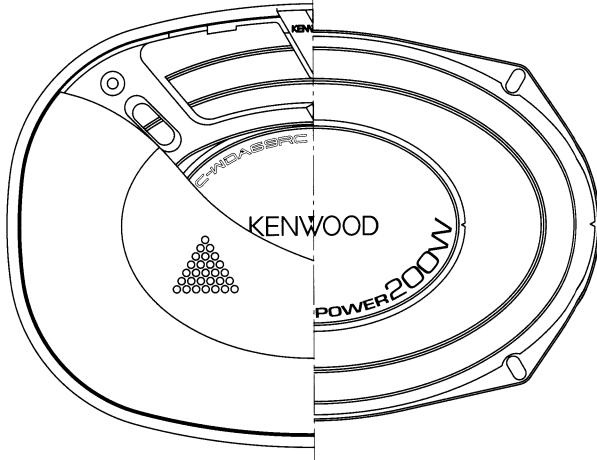
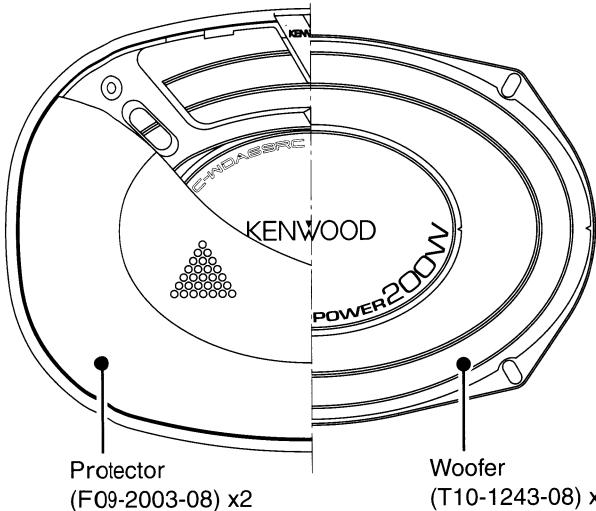
COMPACT POWERED SUB WOOFER

# KFC-WDA69RC

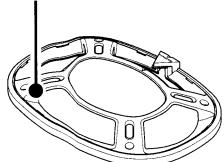
## SERVICE MANUAL

KENWOOD

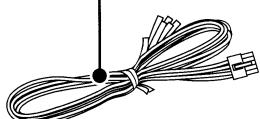
© 2004-2 PRINTED IN JAPAN  
B53-0137-00 (N) 2704



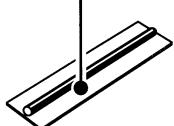
Grille  
(B06-1779-08) x2



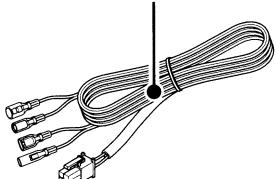
DC cord  
(E30-7049-08)



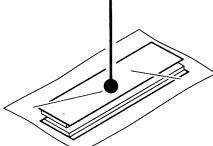
Adhesive tape  
(J69-0159-08)



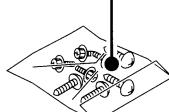
Cord with connector  
(E30-7048-08)



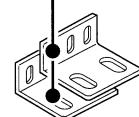
Fastener  
(J69-0148-08)



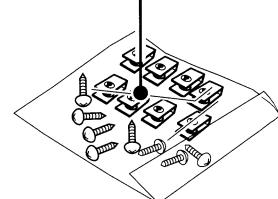
Screw set  
(N99-1753-05)



Mounting hardware  
(J22-0054-14) x2

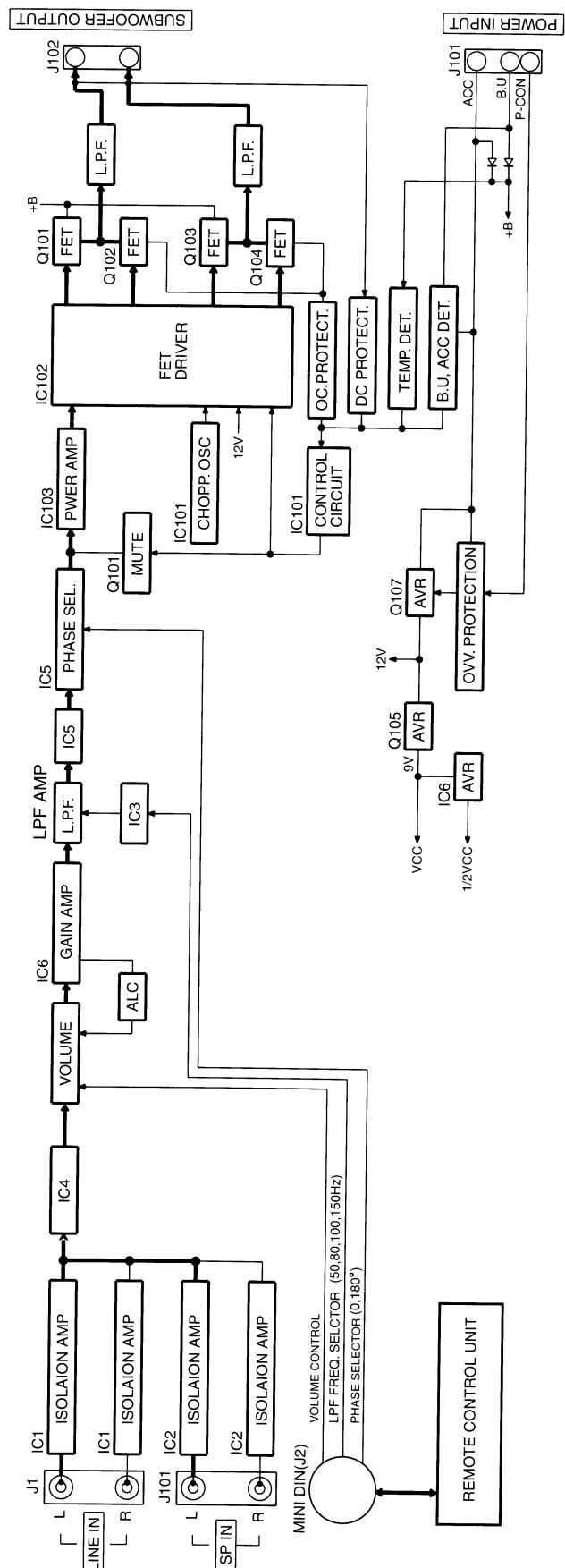


Screw set  
(N99-2148-05)



# KFC-WDA69RC

## BLOCK DIAGRAM



# KFC-WDA69RC

## COMPONENTS DESCRIPTION

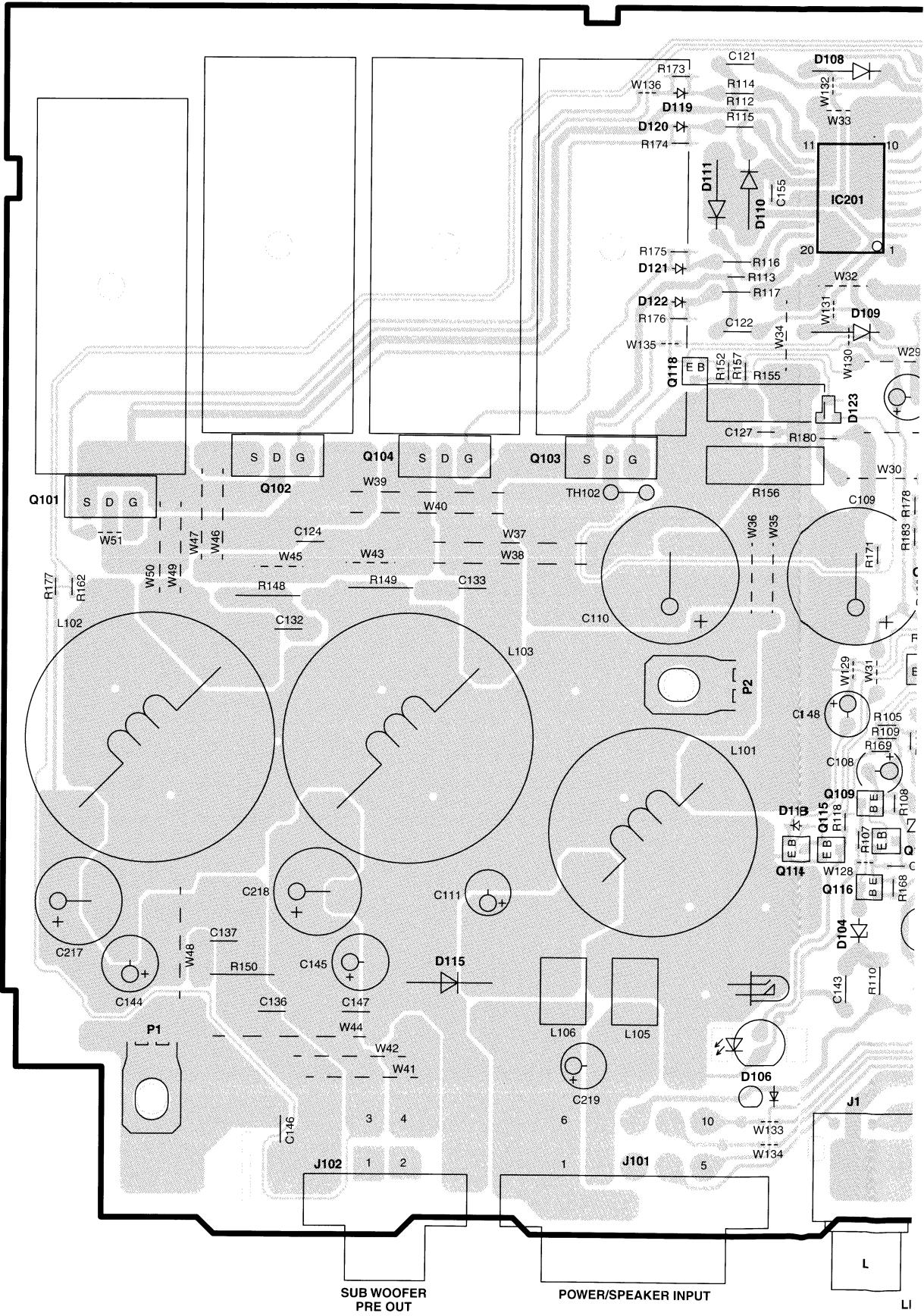
### ● AUDIO UNIT (X09-5800-60)

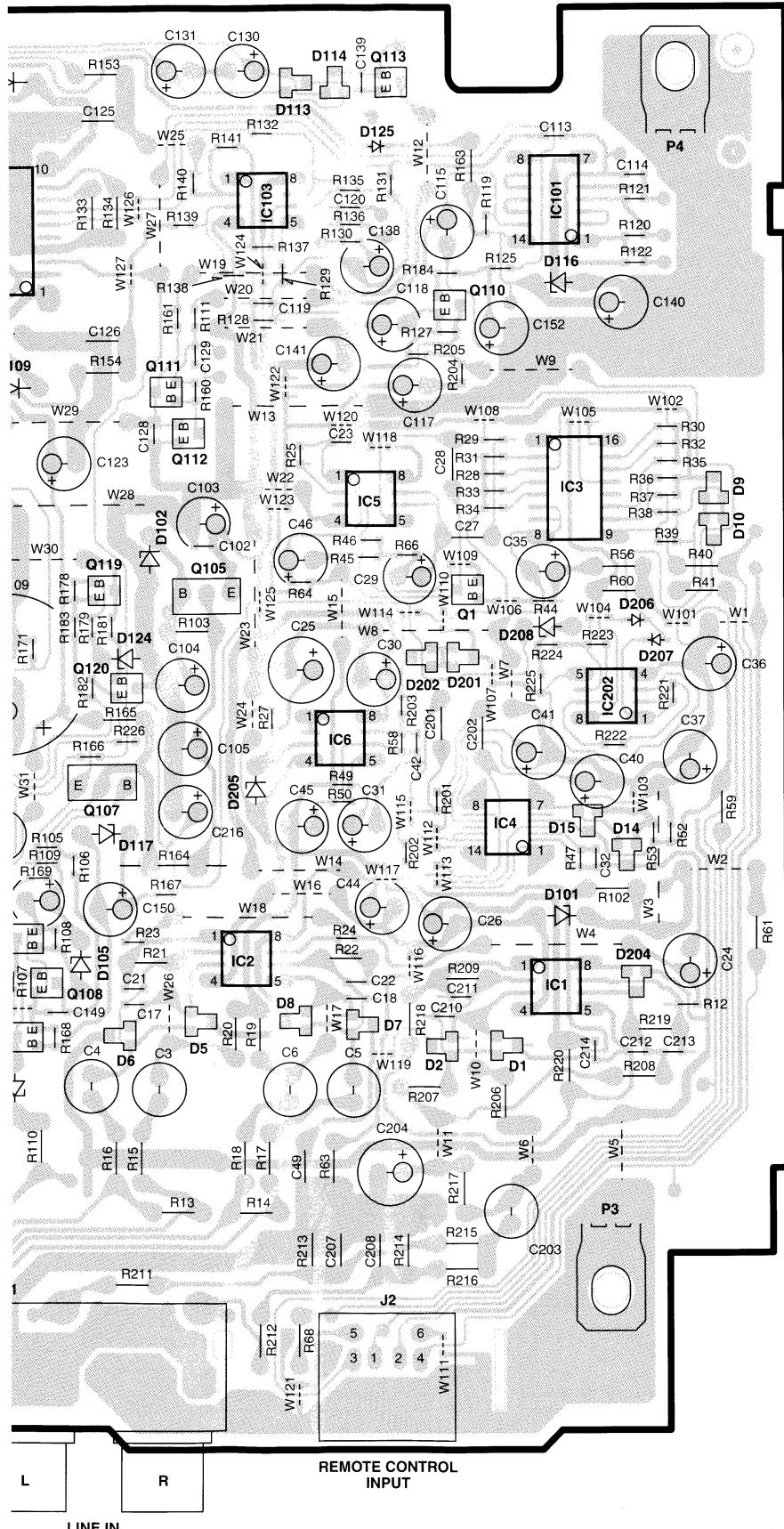
Ref No.	Application / Functions	Operation / Condition / Compatibility
IC1	Line input isolation amp	9V AVR operation (center voltage 4.9V)
IC2	Speaker input isolation amp	9V AVR operation (center voltage 4.9V)
IC3	LPF frequency selector	Select for 50, 80, 100, 150Hz (Default 150Hz)
IC4	Volume control	Electric volume (VCA)
IC5	LPF, phase selector	LPF (-12db/oct.) Phase 0°/180°
IC6	1/2 VCC output OP amp	Center voltage 4.9V
IC101	Chopping wave generator & protection control	Clock 140kHz, protection time (2sec for Power on)
IC103	Power amp first stage, NF circuit	9V AVR operation (center voltage 4.9V)
IC201	D class amp driver	PWM digital converter, FET driver IC
IC202	Clipper circuit	9V AVR operation (center voltage 4.9V)
Q1	Phase selector	Switching for phase 0°and 180°
Q101~104	Power FET	D class AMP final FET
Q105	9V AVR	Use for OP amp
Q107,108	P-CON control	When P-CON line more than 8.7V, this circuit is active (ON)
Q109	Over load voltage detector	When ACC line more than 18.2V, this circuit is active (OFF)
Q110	Muting transistor	Muting for PWM driver when Power is on
Q111,112	Protection detector	Feed back for protection data (latch operation)
Q113	DC protection detector	DC voltage sensibility is ±5V
Q114	LED control	LED light up when Power is ON
Q115	LED control	LED light off when protection circuit ON
Q116	12V AVR control	12V AVR feedback transistor
Q118	Temperature & voltage detector	Protection function
Q119	Power supply voltage detector	Detect for Power off condition
Q120	Discharge transistor (for C148 when Power is off)	Malfunction for LED light up

# KFC-WDA69RC

## PC BOARD (FOIL SIDE VIEW)

**AUDIO UNIT X09-5800-60 (J76-0018-02)**





X09-5800-60

Ref. No.	Address
IC1	5H
IC2	5F
IC3	3H
IC4	4G
IC5	3G
IC6	4G
IC101	2H
IC103	2F
IC201	2E
IC202	4H
Q1	4G
Q101	4B
Q102	3C
Q103	3D
Q104	3C
Q105	3F
Q107	4F
Q108	5F
Q109	5E
Q110	2G
Q111	3F
Q112	3F
Q113	2G
Q114	5E
Q115	5E
Q116	5E
Q118	3D
Q119	3F
Q120	4F

Refer to the schematic diagram for the values of resistors and capacitors.

A

B

C

D

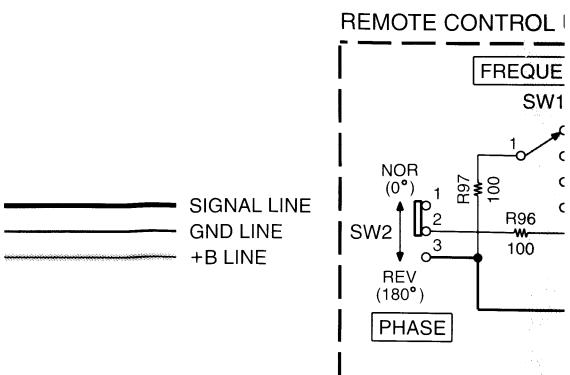
E

# KFC-WDA69RC

1

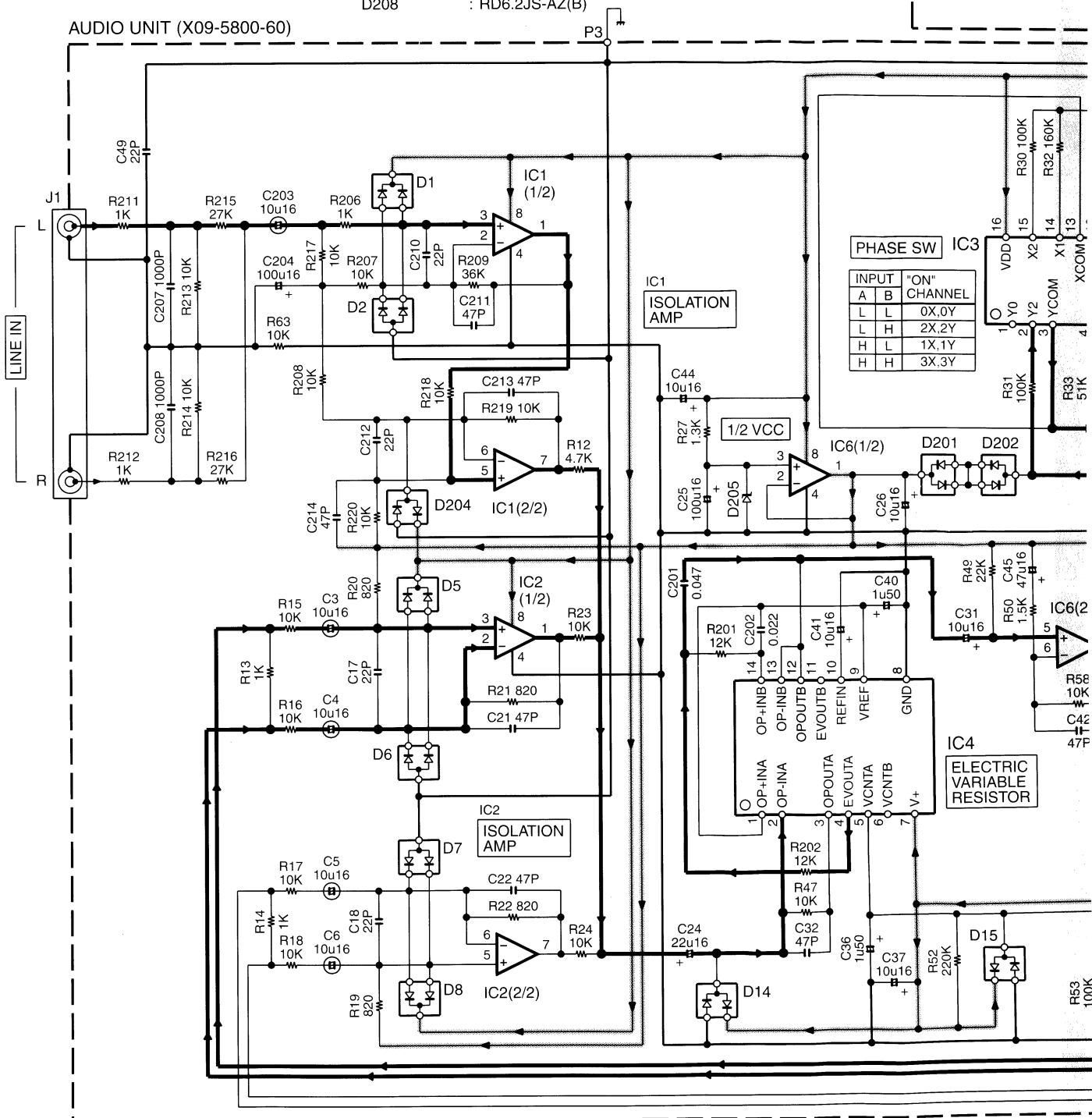
IC1,2,5,6,103,202	: BA4560F
IC3	: TC4052BF(N)-F
IC4	: NJM2172V-TE2
IC101	: BU4069UBF
IC201	: HIP4080AIBT
Q1,108-110,112,116	: 2SC4081
Q101-104	: IRF540N
Q105	: 2SD1863
Q107	: 2SB1241
Q111,119,120	: 2SA1576A
Q113,118	: DTA124EUA
Q114,115	: DTC124EUA
D1,5,8,9,113	: DAN202U
D2,6,7,10,114,123	: DAP202U
D14,15,201,202,204	: DA204U
D101,205	: RD5.1JS-AZ(B2)
D102,116,117	: RD10JS-AZ(B)
D104,124	: RD7.5JS-AZ(B)
D105	: RD15JS-AZ(B)
D106	: B30-1641-05
D108-111	: EG01YNF
D115	: S2V60-A
D118-122,125,206,207	: ISS400
D208	: RD6.2JS-AZ(B)

2

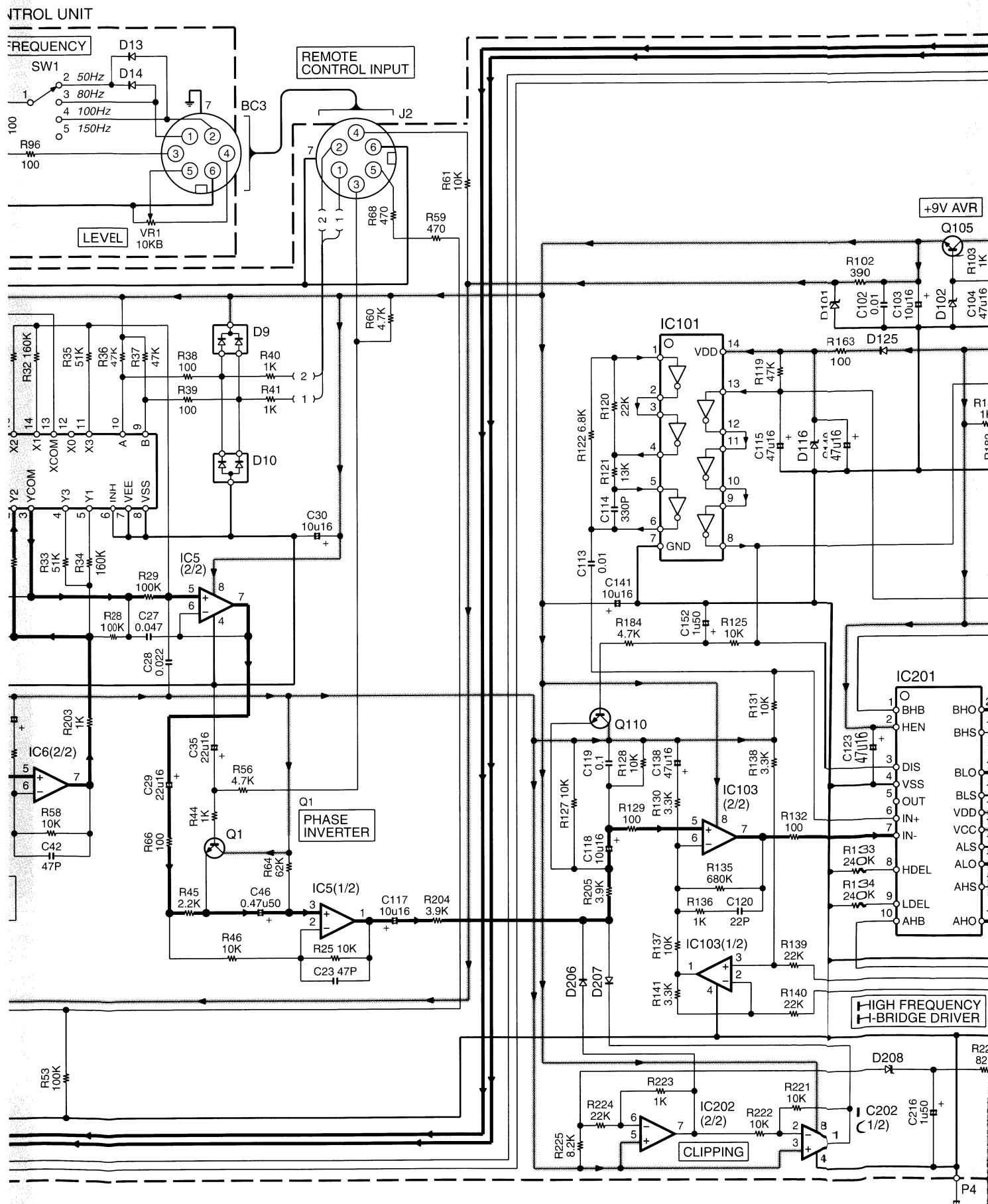


## AUDIO UNIT (X09-5800-60)

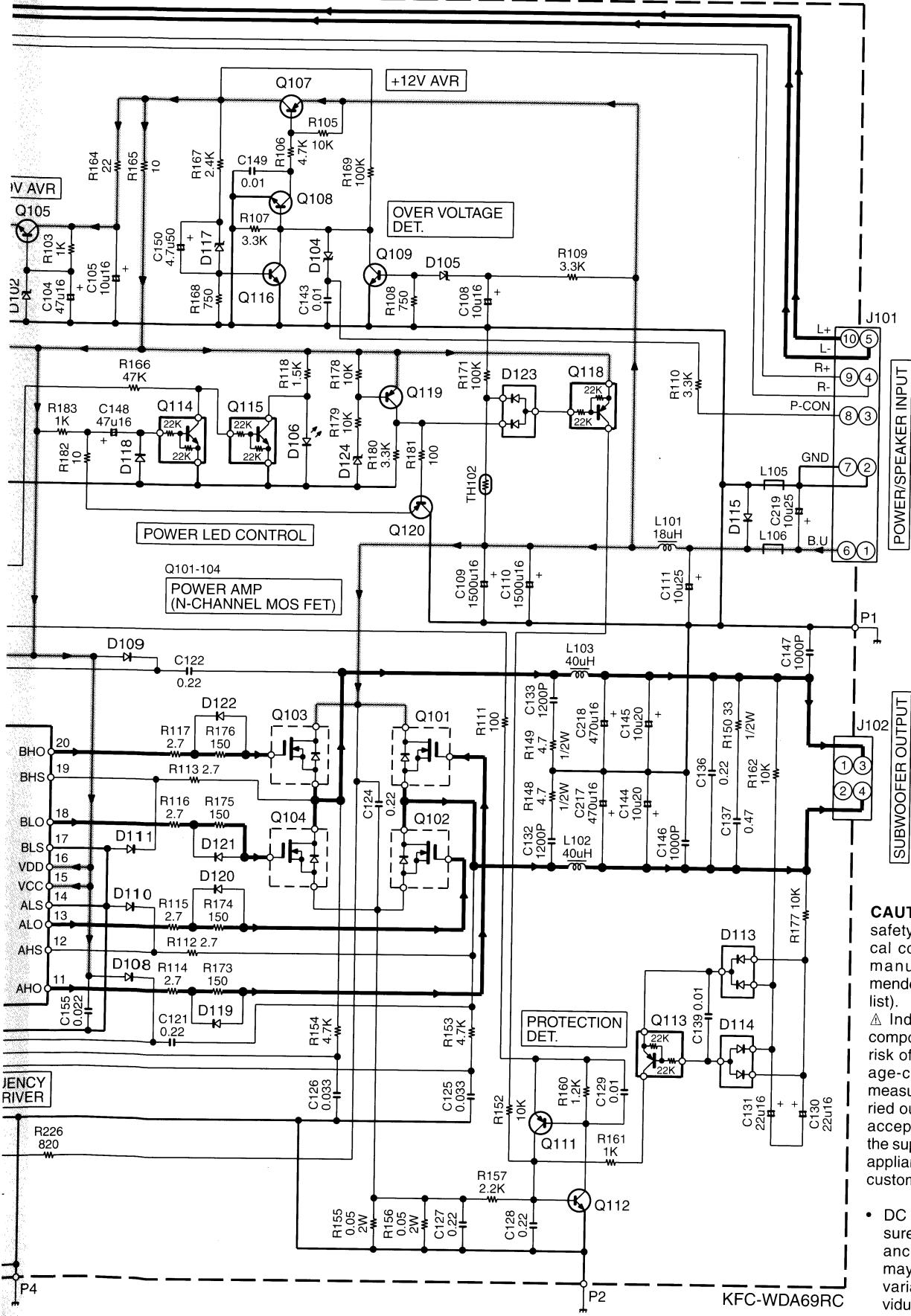
3



# KFC-WDA69RC



**KFC-WDA69RC**



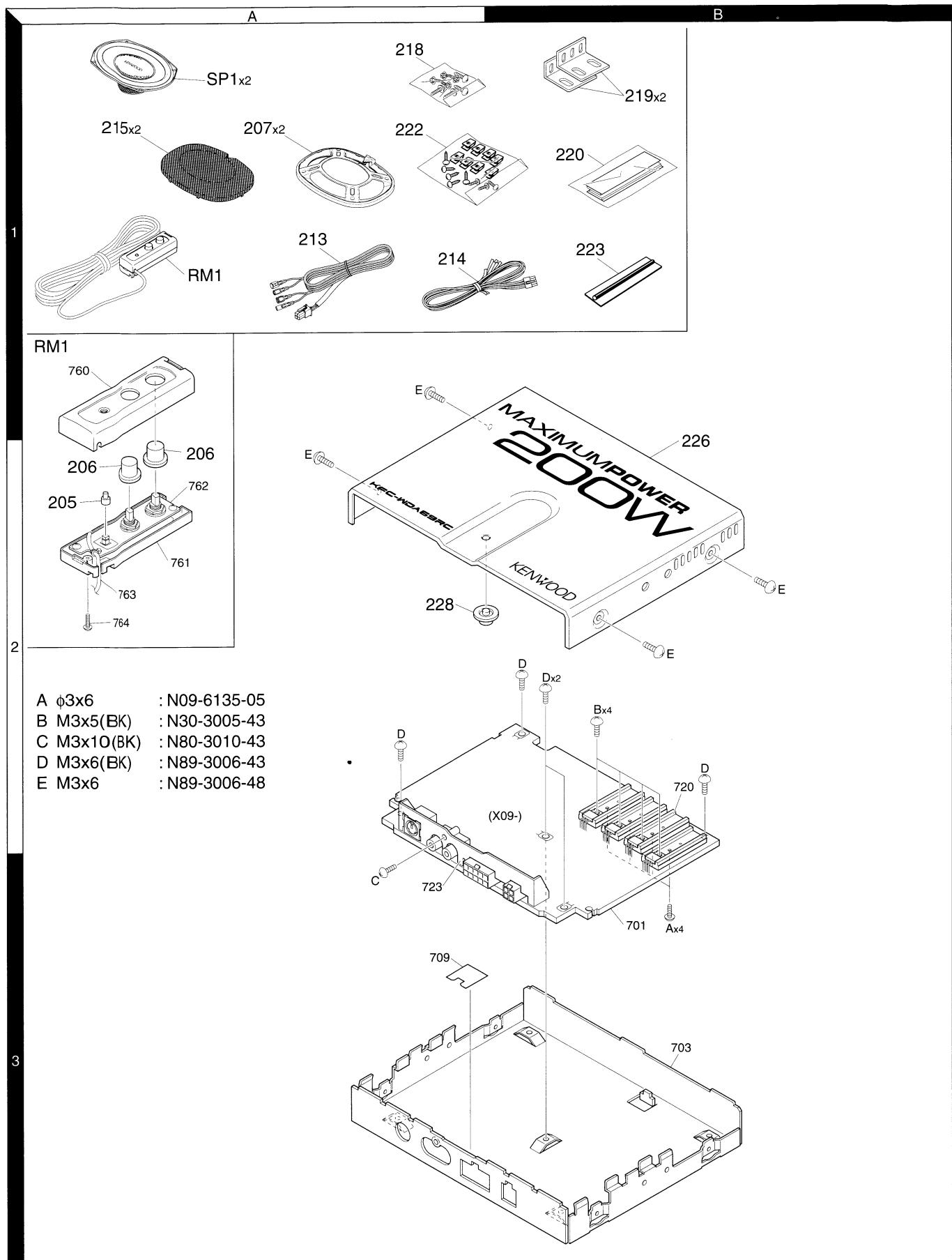
**CAUTION :** For continued safety, replace safety critical components only with manufacturer's recommended parts (refer to parts list).

**▲** Indicates safety critical components. To reduce the risk of electric shock, leakage-current or resistance measurements shall all be carried out (exposed parts are acceptably insulated from the supply circuit) before the appliance is returned to the customer.

- DC voltages are measured with a high impedance voltmeter. Values may vary slightly due to variations between individual instruments or/and units.

# KFC-WDA69RC

## EXPLODED VIEW



Parts with the exploded numbers larger than 700 are not supplied.

# KFC-WDA69RC

## PARTS LIST

\* New parts

Parts without **Parts No.** are not supplied.

Les articles non mentionnés dans le **Parts No.** ne sont pas fournis.

Teile ohne **Parts No.** werden nicht geliefert.

Ref. No.	Add	New	Parts No.	Description	Destination	Ref. No.	Add	New	Parts No.	Description	Destination
<b>KFC-WDA69RC</b>											
RM1	1A	*	A70-0416-08	REMOTE CONTROLLER ASSY (6M)		C41			C90-5574-05	ELECTRO	10UF 16WV
-		*	B46-0100-50	WARRANTY CARD		C42			CC73GCH1H470J	CHIP C	47PF J
-		*	B61-1203-00	INSTRUCTION MANUAL		C44			C90-5574-05	ELECTRO	10UF 16WV
207	1A	*	B06-1779-08	GRILLE		C45			C90-5577-05	ELECTRO	47UF 16WV
213	1A	*	E30-7048-08	CORD WITH CONNECTOR(3.5M)		C46	*		C90-5600-05	ELECTRO	0.47UF 50WV
214	1A	*	E30-7049-08	DC CORD (6M, GND : 1.5M)		C49			CC45FCH1H220J	CERAMIC	22PF J
215	1A	*	F09-2003-08	PROTECTOR		C102			CK73GB1H103K	CHIP C	0.010UF K
F1,2	1A	*	F52-0004-05	FUSE (5A)		C103			C90-5574-05	ELECTRO	10UF 16WV
		*	H51-2037-08	ITEM CARTON CASE		C104			C90-5577-05	ELECTRO	47UF 16WV
-		*	H51-2054-08	ITEM CARTON CASE		C105			C90-5574-05	ELECTRO	10UF 16WV
-		*	H61-0616-08	OUTER CARTON CASE		C108			C90-5574-05	ELECTRO	10UF 16WV
220	1B	*	J69-0148-08	FASTENER		C109,110	*		CD04BC1C152M	ELECTRO	1500UF 16WV
223	1A	*	J69-0159-08	ADHESIVE TAPE		C111	*		C90-5585-05	ELECTRO	10UF 25WV
205	2A		K27-0212-08	KNOB (BUTTON)		C113			CK73GB1H103K	CHIP C	0.010UF K
206	2A		K29-0575-08	KNOB		C114			CC73GCH1H331J	CHIP C	330PF J
222	1A	*	N99-2148-08	SCREW SET		C115			C90-5577-05	ELECTRO	47UF 16WV
SP1	1A	*	T10-1243-08	WOOFER		C117,118			C90-5574-05	ELECTRO	10UF 16WV
<b>AMPLIFIER (W03-5042-08)</b>											
226	2B	*	A01-2840-02	METALLIC CABINET		C119			CK73GB1H104K	CHIP C	0.10UF K
228	2B	*	B19-2225-04	LIGHTING BOARD		C120			CC73GCH1H220J	CHIP C	22PF J
-		*	H11-1547-04	POLYSTYRENE FOAMED BOARD		C121,122			CF92FV1H224J	MF-C	0.22UF J
-		*	H12-2721-04	PACKING FIXTURE		C123			C90-5577-05	ELECTRO	47UF 16WV
-		*	H25-0338-04	PROTECTION BAG		C124			CF92FV1H224J	MF-C	0.22UF J
-		*	H54-3143-03	ITEM CARTON CASE		C125,126			CF92FV1H333J	MF-C	0.033UF J
-		*	H64-2741-03	OUTER CARTON CASE		C127,128			CK73FB1C224K	CHIP C	0.22UF K
219	1A	*	J22-0054-14	MOUNTING HARDWARE		C129			CK73GB1H103K	CHIP C	0.010UF K
218	1A	*	N99-1753-05	SCREW SET		C130,131			C90-5575-05	ELECTRO	22UF 16WV
C	3A	*	N80-3010-43	PAN HEAD TAPTRITE SCREW		C132,133			CF92FV1H122J	MF-C	1200PF J
D	2B	*	N89-3006-43	BINDING HEAD TAPTRITE SCREW		C136			CF92FV1H224J	MF-C	0.22UF J
E	2B		N89-3006-48	BINDING HEAD TAPTRITE SCREW		C137			CF92FV1H474J	MF-C	0.47UF J
<b>AUDIO UNIT (X09-5800-60)</b>											
C3-6		*	C90-5554-05	ELECTRO	10UF 16WV	C138			C90-5577-05	ELECTRO	47UF 16WV
C17,18		*	CC73GCH1H220J	CHIP C	22PF J	C139			CK73GB1H103K	CHIP C	0.010UF K
C21-23			CC73GCH1H470J	CHIP C	47PF J	C140			C90-5577-05	ELECTRO	47UF 16WV
C24			C90-5575-05	ELECTRO	22UF 16WV	C141			C90-5574-05	ELECTRO	10UF 16WV
C25		*	C90-5578-05	ELECTRO	100UF 16WV	C143			CF92FV1H103J	MF-C	0.010UF J
C26			C90-5574-05	ELECTRO	10UF 16WV	C144,145	*		C90-5675-05	ELECTRO	10UF 20WV
C27			CF92FV1H473J	MF-C	0.047UF J	C146,147			CF92FV1H102J	MF-C	1000PF J
C28			CF92FV1H223J	MF-C	0.022UF J	C148			C90-5577-05	ELECTRO	47UF 16WV
C29			C90-5575-05	ELECTRO	22UF 16WV	C149			CK73GB1H103K	CHIP C	0.010UF K
C30,31			C90-5574-05	ELECTRO	10UF 16WV	C150	*		C90-5604-05	ELECTRO	4.7UF 50WV
C32			CC73GCH1H470J	CHIP C	47PF J	C152			C90-5601-05	ELECTRO	1UF 50WV
C35			C90-5575-05	ELECTRO	22UF 16WV	C207,208			CK45FB1H102K	CERAMIC	1000PF K
C36			C90-5601-05	ELECTRO	1UF 50WV	C210			CC73GCH1H220J	CHIP C	22PF J
C37			C90-5574-05	ELECTRO	10UF 16WV	C211			CC73GCH1H470J	CHIP C	47PF J
C40			C90-5601-05	ELECTRO	1UF 50WV	C212			CC73GCH1H220J	CHIP C	22PF J
						C213,214			CC73GCH1H470J	CHIP C	47PF J
						C216			C90-5601-05	ELECTRO	1UF 50WV
						C217,218	*		C90-5581-05	ELECTRO	470UF 16WV
						C219	*		C90-5585-05	ELECTRO	10UF 25WV
						J1	*		E63-0900-05	PIN JACK	

E : Europe    K : North America    M : Other Areas    W : Without Europe

 Indicates safety critical components.

## PARTS LIST

\* New parts

Parts without **Parts No.** are not supplied.Les articles non mentionnés dans le **Parts No.** ne sont pas fournis.Teile ohne **Parts No.** werden nicht geliefert.

AUDIO UNIT (X09-5800-60)

Ref. No.	A d d	N e w	Parts No.	Description	Desti- nation	Ref. No.	A d d	N e w	Parts No.	Description	Desti- nation
J2			E56-0812-05	CYLINDRICAL RECEPTACLE		R122			RK73GB2A682J	CHIP R 6.8K J 1/10W	
J101			E08-1005-05	RECTANGULAR RECEPTACLE		R125			RK73GB2A103J	CHIP R 10K J 1/10W	
J102			E58-0972-05	RECTANGULAR RECEPTACLE		R127,128			RK73GB2A103J	CHIP R 10K J 1/10W	
P1-4			E23-0745-05	TERMINAL		R129			RK73GB2A101J	CHIP R 100 J 1/10W	
L101			L33-1937-05	CHOKE COIL		R130			RK73GB2A332J	CHIP R 3.3K J 1/10W	
L102,103			L33-1936-05	CHOKE COIL		R131			RK73GB2A103J	CHIP R 10K J 1/10W	
L105,106			L92-0382-05	FERRITE CORE		R132			RK73GB2A101J	CHIP R 100 J 1/10W	
A	3B	*	N09-6135-05	TAPITTE SCREW		R133,134			RD14BB2C244J	RD 240K J 1/6W	
B	2B	*	N30-3005-43	PAN HEAD MACHINE SCREW		R135			RK73GB2A684J	CHIP R 680K J 1/10W	
R12			RK73GB2A472J	CHIP R 4.7K J 1/10W		R136			RK73GB2A102J	CHIP R 1.0K J 1/10W	
R13,14			RD14BB2C102J	RD 1.0K J 1/6W		R137			RK73GB2A103J	CHIP R 10K J 1/10W	
R15-18			RD14BB2C103J	RD 10K J 1/6W		R138			RK73GB2A332J	CHIP R 3.3K J 1/10W	
R19-22			RD14BB2C821J	RD 820 J 1/6W		R139,140			RK73GB2A223J	CHIP R 22K J 1/10W	
R23-25			RK73GB2A103J	CHIP R 10K J 1/10W		R141			RK73GB2A332J	CHIP R 3.3K J 1/10W	
R27			RK73GB2A132J	CHIP R 1.3K J 1/10W		R148,149			RD14DB2H4R7J	SMALL-RD 4.7 J 1/2W	
R28-31			RK73GB2A104J	CHIP R 100K J 1/10W		R150			RD14DB2H330J	SMALL-RD 33 J 1/2W	
R32			RK73GB2A164J	CHIP R 160K J 1/10W		R152			RK73GB2A103J	CHIP R 10K J 1/10W	
R33			RK73GB2A513J	CHIP R 51K J 1/10W		R153,154			RD14BB2C472J	RD 4.7K J 1/6W	
R34			RK73GB2A164J	CHIP R 160K J 1/10W		R155,156			R92-2105-05	RD 0.05 K 2W	
R35			RK73GB2A513J	CHIP R 51K J 1/10W		R157			RK73GB2A222J	CHIP R 2.2K J 1/10W	
R36,37			RK73GB2A473J	CHIP R 47K J 1/10W		R160			RK73GB2A122J	CHIP R 1.2K J 1/10W	
R38,39			RK73GB2A101J	CHIP R 100 J 1/10W		R161			RK73GB2A102J	CHIP R 1.0K J 1/10W	
R40,41			RD14BB2C102J	RD 1.0K J 1/6W		R162			RK73GB2A103J	CHIP R 10K J 1/10W	
R44			RK73GB2A102J	CHIP R 1.0K J 1/10W		R163			RD14BB2C101J	RD 100 J 1/6W	
R45			RK73GB2A222J	CHIP R 2.2K J 1/10W		R164			RD14NB2E220J	RD 22 J 1/4W	
R46,47			RK73GB2A103J	CHIP R 10K J 1/10W		R165			RD14BB2C100J	RD 10 J 1/6W	
R49			RK73GB2A223J	CHIP R 22K J 1/10W		R166			RK73GB2A473J	CHIP R 47K J 1/10W	
R50			RK73GB2A152J	CHIP R 1.5K J 1/10W		R167			RK73GB2A242J	CHIP R 2.4K J 1/10W	
R52			RK73GB2A224J	CHIP R 220K J 1/10W		R168			RK73GB2A751J	CHIP R 750 J 1/10W	
R53			RK73GB2A104J	CHIP R 100K J 1/10W		R169			RK73GB2A104J	CHIP R 100K J 1/10W	
R56			RD14BB2C472J	RD 4.7K J 1/6W		R171			RK73GB2A151J	CHIP R 150 J 1/10W	
R58			RK73GB2A103J	CHIP R 10K J 1/10W		R173-176			RK73GB2A103J	CHIP R 10K J 1/10W	
R59			RD14BB2C471J	RD 470 J 1/6W		R177-179			RK73GB2A332J	CHIP R 3.3K J 1/10W	
R60			RD14BB2C472J	RD 4.7K J 1/6W		R180			RK73GB2A101J	CHIP R 100 J 1/10W	
R61			RD14BB2C103J	RD 10K J 1/6W		R181			RK73GB2A100J	CHIP R 10 J 1/10W	
R63			RD14BB2C103J	RD 10K J 1/6W		R182			RK73GB2A102J	CHIP R 1.0K J 1/10W	
R64			RK73GB2A623J	CHIP R 62K J 1/10W		R183			RK73GB2A472J	CHIP R 4.7K J 1/10W	
R66			RK73GB2A101J	CHIP R 100 J 1/10W		R184			RK73GB2A123J	CHIP R 12K J 1/10W	
R68			RD14BB2C471J	RD 470 J 1/6W		R201,202			RK73GB2A102J	CHIP R 1.0K J 1/10W	
R102			RD14BB2C391J	RD 390 J 1/6W		R203			RK73GB2A392J	CHIP R 3.9K J 1/10W	
R103			RD14BB2C102J	RD 1.0K J 1/6W		R204,205			RD14BB2C102J	RD 1.0K J 1/6W	
R105			RK73GB2A103J	CHIP R 10K J 1/10W		R206			RD14BB2C103J	RD 10K J 1/6W	
R106			RK73GB2A472J	CHIP R 4.7K J 1/10W		R207,208			RD14BB2C363J	RD 36K J 1/6W	
R107			RK73GB2A332J	CHIP R 3.3K J 1/10W		R209			RD14BB2C102J	RD 1.0K J 1/6W	
R108			RK73GB2A751J	CHIP R 750 J 1/10W		R211,212			RK73GB2A232J	RD 10K J 1/6W	
R109			RK73GB2A332J	CHIP R 3.3K J 1/10W		R213,214			RD14BB2C273J	RD 27K J 1/6W	
R110			RD14BB2C332J	RD 3.3K J 1/6W		R215,216			RD14BB2C103J	RD 10K J 1/6W	
R111			RK73GB2A101J	CHIP R 100 J 1/10W		R217-220			RK73GB2A103J	CHIP R 10K J 1/10W	
R112,113	*	*	RK73GB2A2R7J	CHIP R 2.7 J 1/10W		R221,222			RK73GB2A102J	CHIP R 1.0K J 1/10W	
R114-117			RD14BB2C2R7J	RD 2.7 J 1/6W		R223			RK73GB2A223J	CHIP R 22K J 1/10W	
R118			RK73GB2A152J	CHIP R 1.5K J 1/10W		R224			RK73GB2A822J	CHIP R 8.2K J 1/10W	
R119			RK73GB2A473J	CHIP R 47K J 1/10W		R225			RK73GB2A821J	CHIP R 820 J 1/10W	
R120			RK73GB2A223J	CHIP R 22K J 1/10W		R226			R92-1252-05	CHIP R 0 OHM J 1/16W	
R121			RK73GB2A133J	CHIP R 13K J 1/10W		W101-136					

E : Europe    K : North America    M : Other Areas    W : Without Europe

△ Indicates safety critical components.

# KFC-WDA69RC

## PARTS LIST

\* New parts

Parts without **Parts No.** are not supplied.

Les articles non mentionnés dans le **Parts No.** ne sont pas fournis.

Teile ohne **Parts No.** werden nicht geliefert.

**AUDIO UNIT (X09-5800-60)**

Ref. No.	Add	New	Parts No.	Description	Desti-nation
D1			DAN202U	DIODE	
D2			DAP202U	DIODE	
D5			DAN202U	DIODE	
D6,7			DAP202U	DIODE	
D8,9			DAN202U	DIODE	
D10			DAP202U	DIODE	
D14,15			DA204U	DIODE	
D101	*		RD5.1JS-AZ (B2)	ZENER DIODE	
D102	*		RD10JS-AZ (B)	ZENER DIODE	
D104	*		RD7.5JS-AZ (B)	ZENER DIODE	
D105	*		RD15JS-AZ (B)	ZENER DIODE	
D106			B30-1641-05	LED	
D108-111	*		EG01YNF	DIODE	
D113			DAN202U	DIODE	
D114			DAP202U	DIODE	
D115			S2V60*A	DIODE	
D116,117	*		RD10JS-AZ (B)	ZENER DIODE	
D118-122			1SS400	DIODE	
D123			DAP202U	DIODE	
D124	*		RD7.5JS-AZ (B)	ZENER DIODE	
D125			1SS400	DIODE	
D201,202			DA204U	DIODE	
D204			DA204U	DIODE	
D205	*		RD5.1JS-AZ (B2)	ZENER DIODE	

E : Europe   K : North America   M : Other Areas   W : Without Europe

Ref. No.	Add	New	Parts No.	Description	Desti-nation
D206,207			1SS400	DIODE	
D208	*		RD6.2JS-AZ (B)	ZENER DIODE	
IC1,2			BA4560F	IC	
IC3	*		TC4052BF (N)-F	MOS-IC	
IC4			NJM2172V-TE2	ANALOGUE IC	
IC5,6			BA4560F	IC	
IC101			BU4069UBF	IC (INVERTER X6)	
IC103			BA4560F	IC	
IC201	*		HIP4080AIBT	DI BI-POLAR IC	
IC202			BA4560F	IC	
Q1			2SC4081	TRANSISTOR	
Q101-104			IRF540N	FET	
Q105	*		2SD1863	TRANSISTOR	
Q107	*		2SB1241	TRANSISTOR	
Q108-110			2SC4081	TRANSISTOR	
Q111			2SA1576A	TRANSISTOR	
Q112			2SC4081	TRANSISTOR	
Q113			DTA124EUA	TRANSISTOR	
Q114,115			DTC124EUA	TRANSISTOR	
Q116			2SC4081	TRANSISTOR	
Q118			DTA124EUA	TRANSISTOR	
Q119,120			2SA1576A	TRANSISTOR	
TH102	*		PTFL04BD222Q2	POSITIVE RESISTOR	

△ Indicates safety critical components.

## SPECIFICATIONS

### Amp unit

Maximum Output .....	200W
Frequency Response (System) .....	30Hz~150Hz
Signal to Noise Ratio .....	85dB
Low-Pass Filter Frequency ...	50, 80, 100, 150Hz (4steps)
Phase .....	0°, 180°
Sensitivity / input impedance	210mV / 10kΩ (RCA pin jack) 4.2V / 1kΩ (Speaker input)
Operating Voltage .....	14.4V (10.5V~16V allowable)
Bridged Power Output .....	80W X 2 (0.8% THD)
Maximum current consumption .....	10A
Fuse capacity .....	5A x 2

External Size (W x H x D) ..... 195 x 30 x 155 mm  
(7-11/16 x 1-3/16 x 6-1/8 (inch))

Weight ..... 800g (1.8lbs)

### Speaker unit

Maximum input .....	200W
Impedance .....	1.5Ω
Woofer .....	153 x 229 mm Cone type
External Size (W x H x D) .....	255 x 184 x 110.4 mm (10-1/16 x 7-1/4 x 4-3/8 inch)

### General

Net Weight (Amp unit & Speaker units) ..... 4.0kg (8.8lbs)

KENWOOD follows a policy of continuous advancements in development. For this reason specifications may be changed without notice.

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